

I CLAIM:

1. A method for manufacturing a winding protection for tape-wound cores with a polymer, said method comprising the steps of providing a rotatable drum container of a drum process, inserting a plurality of toroidal tape-wound cores into the drum container, while rotating the drum container creating a vacuum in the drum container and introducing a vapor of a para-xylylene monomer into the rotating drum container to condense on the surfaces of the cores and then polymerizing the monomer at the surfaces.

2. A method according to claim 1, wherein the step of providing a plurality of tape-wound cores provides cores composed of tapes selected from amorphous and nano-crystalline alloys.

3. A method according to claim 2, wherein the tape-wound cores exhibit a filling factor between 70% and 90%.

4. A method according to claim 1, wherein the step of introducing a vapor of para-xylylene monomers includes evaporating a di-para-xylylene dimer at a temperature range of approximately 100°-175°C and a pressure of 1 Torr, and then thermally decomposing the vaporized di-para-xylylene dimer at a temperature range of approximately 650° -750°C and a pressure of approximately 0.5 Torr to form a para-xylylene monomer.